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School curriculum and outdoor education

Part 1: Early childhood and primary school

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Introduction for full chapter

This chapter explores broad possibilities for learning outdoors in formal education contexts.

In part one we set the scene for the chapter by examining contemporary curricula in the early childhood and school sectors. National curriculum documents are introduced to look at the vision and ‘big picture’ direction they suggest for outdoor education practice. Attention then turns to consider outdoor education initiatives in early childhood settings, with examples drawn from programmes to illustrate the unique and practical ways in which they ‘walk the talk’ of student-centred, bicultural, holistic, and sustainable approaches. The discussion moves to consider the opportunities the primary school context affords for outdoor education that deliberately focuses on students’ relationships with the outdoor places they inhabit. Examples such as the well established Enviro-Schools programme and integrated units of learning are outlined to illustrate what we consider to be the heart of this forward looking outdoor education.

In part two, the focus moves to outdoor education in the secondary school. While the distinctiveness of the secondary setting with its associated compartmentalised, subject-focused curriculum is initially acknowledged, the focus broadens to consider a range of factors or enablers of innovative outdoor education practice. As with part one, examples of ‘real’ curricula, co-curricula, and extra-curricula programmes are featured. These examples provide powerful guides for outdoor educators seeking to rethink, refine and reshape their students’ outdoor learning experiences in ways that enable them to enjoy, understand, and act for the environments in which they live and move. In sum, this chapter explores a vision of a more sustainable outdoor education future.

Setting the scene: Outdoor education in school settings

Snapshot one

Kaitiakitanga is looking after places, things and people. We have observed our children gain a sense of pride and respect for our kindergarten environment. We believe that when children have the opportunity to engage and care for the natural environment they will gain the skills, knowledge and desire to care for it in the future. The environment is the third teacher. There is a learning opportunity in every space. We have gardens that are sensory, edible, native and flowering. We have composting and recycling systems, including water conservation and eco-systems. Children are having a shared responsibility to look after our place and this is valued as real work, so everything that we do in the kindergarten here is included with the children.

(Carolyn O'Connor, teacher at Papamoa kindergarten in Ritchie, 2010b, p.13)

Outdoor education in early childhood settings and schools in Aotearoa New Zealand has a long and rich tradition (see Lynch, 2006 for the history in schools). It remains a key component of school life (Haddock, 2007; Zink & Boyes, 2005/06, 2007), with a wide variety of outdoor education experiences currently offered in centres and schools nationwide. These school-based experiences are the focus of this chapter.

Many authors in this book suggest that conceptualisations of outdoor education in Aotearoa New Zealand have been, and continue to be contested. Given this, it is timely to note that in this chapter we embrace a broad definition of outdoor education. This means that we view outdoor education in a multidisciplinary and holistic way as any curriculum-based learning in, for, and about the outdoors. Such a conceptualisation includes, but is not limited to, outdoor education experiences as described in health and physical education curricula (Ministry of Education (MoE), 1999, 2007). Adopting this multidisciplinary definition of outdoor education gives a clear signal about the prominence we give to approaches that connect rather than compartmentalise school subjects, and that respond to contemporary societal and global concerns about the environmental issues and pressures identified in the opening chapter. We also aim

to demonstrate that there is much to celebrate about present practice and to build from as we look to the future. To this end, snapshots of contemporary outdoor education initiatives and approaches that explicitly educate for a more sustainable future are scattered throughout. We hope that these glimpses of programmes in-situ inspire you and prompt you to ponder the questions: What are the common threads in the stories shared? And in turn, what possibilities or insights are opened up for my outdoor education practice?

What framework do curricula provide for contemporary outdoor education?

Snapshot two

A makeover at Omata School in Taranaki now sees a self-sustaining bush trail that is managed and well used by students....Each class looked at what was needed to make a long-term difference. Along the way they found out that real scientists often change their minds. Bridgit Barleyman's Year 2 and 3 class discovered they could build ponga seedling beds alongside the tracks to gather leaf litter and help tiny plants grow. They mapped out their beds and pairs of children made each one. 'I thought we could put the beds on the hilly bits,' said Katie, 'but I wouldn't do that now. They would get washed away.'

'My class established that trees were actually alive' said Year 1 and 2 teacher Julie Herbert. 'A lot of children hadn't realised that because they couldn't see them moving'... 'The five year olds will see their trees grow,' said Karen, 'so they'll want to take care of them while they're here. Some parents have shown the children the trees they planted in the 1980's. They're still pretty proud of their trees.' (Tapp, 2008, pp. 8-9)

Official national curriculum for early childhood centres and schools (MoE, 1996, 2007, 2008) arguably provide a strong conceptual platform for outdoor education that explicitly educates for a more sustainable and equitable future. This part of the chapter briefly introduces these curriculum documents, and in doing so, provides a foundation for the discussions about school-based practice that follow.

Te Whāriki He Whāriki Mātauranga mō ngā Mokopuna o Aotearoa (MoE, 1996) is the official early childhood curriculum for Aotearoa New Zealand and its first bicultural curriculum. *Te Whāriki*¹ is based on the concept of a whāriki (mat), weaving together four principles (Empowerment -Whakamana, Holistic Development-Kotahitanga, Family and Community-Whānau Tangata, and Relationships-Ngā Hononga) and five strands (Well-being-Mana Atua, Belonging- Mana Whenua, Contribution- Mana Tangata, Communication-Mana Reo, and Exploration-Mana Aotūroa). Embracing a definition of curriculum as “the sum total of the experiences, activities and events, whether direct or indirect, which occur within an environment designed to foster children’s learning and development” (p.10), *Te Whāriki* also emphasises how learning is socially and culturally mediated. As a result, “reciprocal and responsive relationships for children with people, places, and things” (MoE, 1996, p.9) are highlighted. Professional commentary has consistently noted that *Te Whāriki* integrates rather than separates traditional subjects (e.g. Mutch, 2003), is non prescriptive, clearly communicates a “profound acknowledgment of the importance of culture” (Te One, 2003, p.42)², and positions children as active participants in their own learning (e.g. MacArthur, Purdue & Ballard, 2003; Nuttall, 2003).

Despite being published fifteen years ago, we consider that *Te Whāriki* identifies a range of relevant prompts for a future-focused outdoor education. Looking more closely at the principles, strands, and goals for example reveals a view of learning as being relational, integrated, and holistic. The pedagogical potential of this for outdoor education is alluded to by Ritchie (2010b) when she noted that the principle of Family and Community-Whānau Tangata and the strand of Belonging-Mana Whenua supported early childhood centres endeavouring to work with their local communities to encourage ecological sustainability. Furthermore, the focus on children learning through active exploration of their environment in the strand of Exploration- Mana Aotūroa, gives rise to curriculum goals identifying the value of play as “meaningful learning”, the importance of children gaining “confidence in and control of their bodies”, and the need for children to develop “working theories for making sense of the natural,

¹ *Te Whāriki* (MoE, 1996) is designed for children from birth to the time they enter school.

² For further discussion of the Māori concepts underpinning *Te Whāriki*, see Reedy (2003).

social, physical, and material worlds” (MoE, 1996, p.16). Implicit in children’s active exploration of the environment is the importance of “respect for the environment” as well as “Māori ways of knowing and making sense of the world and of respecting and appreciating the natural environment” (p.82).

Turning to the primary school curricula *The New Zealand Curriculum* (NZC) (MoE, 2007) and *Te Marautanga o Aotearoa* (MoE, 2008)³, we similarly see philosophical precepts that are relevant to outdoor education aiming to contribute to a more sustainable and equitable future. In the NZC for example, a vision of young New Zealanders being confident, connected, actively involved, and lifelong learners (MoE, 2007, p.8), specifies connectedness to the land, environment, and communities as well as contribution to the environmental well-being of Aotearoa New Zealand as integral aspects of this. Stepping through to the eight principles⁴, there is explicit attention given to sustainability (within the principle of future focus), cultural diversity, and community engagement. Furthermore, diversity, equity, community and participation, and ecological sustainability are directly targeted as values or “deeply held beliefs about what is important or desirable” (MoE, 2007, p 10). The five key competencies or “capabilities for living and lifelong learning” (MoE, 2007, p. 12-13), are considered to be “shaped by interactions with people, places, ideas, and things” (ibid). More particularly, the key competency of ‘Participating and contributing’ highlights the importance of students being “actively involved” in their communities and of “contributing to the quality and sustainability of social, cultural, physical, and economic environments” (MoE, 2007, p.13). As has been suggested before (Cosgriff, 2011), human relationships and interactions with communities as well as non-human nature, are arguably also woven through almost all of the eight learning area (subject) statements that enact this philosophical framework of the NZC.

³ The NZC is the curriculum for all English-medium state and integrated schools, while *Te Marautanga o Aotearoa* is the curriculum for Māori-medium schools.

⁴ The 8 Principles of the NZC which “embody beliefs about what is important and desirable in school curriculum” (MoE, 2007, p.9), are high expectations, Treaty of Waitangi, cultural diversity, inclusion, learning to learn, community engagement, coherence, and future focus.

The English translation of *Te Marautanga o Aotearoa* (MoE, 2008) reveals that the Treaty of Waitangi is both central to the curriculum and gives rise to the five overarching principles: Ngā Mātāpono Whānau. As with the NZC, we consider that these principles further illustrate that national curriculum in Aotearoa New Zealand provide useful policy platforms for outdoor education that is attentive to environmental sustainability. For example, not only should the school-based curricula aid learners to be “confident in the Māori world” (p.6) but it should also include “experiences outside of the school which are relevant to the whānau and community” (p.7). More specifically the fifth overarching principle ‘Environmental health is personal health’ draws attention to the “place of the student in their own world” (p.7) and thus calls for school-based curriculum to support “a sustainable environment; learning pathways which enable the learner to engage purposefully with the environment; holistic teaching programmes; and learner engagement with their environment” (p.7). The values and attitudes identified in *Te Marautanga o Aotearoa* as well as the commentary in sections such as that on teaching and learning, continually reinforce the importance of the world of the learner, Māori knowledges, and learning environments including the marae and those in local areas and beyond. In a similar fashion to the NZC, the strands and achievement objectives in a range of learning areas address sustainable human relationships with the natural environment.

Finally, while not a curriculum document per se, the *EOTC Guidelines* (MoE, 2009) clearly reinforces the relationships between national curricula (MoE, 2007, 2008) and outdoor education. This is evident in statements such as “The NZC supports the aspirations for broad deep learning in real life contexts within and across the learning areas” (MoE, 2009, p.6), and the point that “The vision of New Zealand’s national curriculum cannot be achieved inside classroom alone” (MoE, 2009, p.7). In summary and like others (e.g. Hammonds, 2008, 2009; Hislop, 2008; Ritchie, 2010b), this section thus has argued that contemporary early childhood and school curricula (MoE, 1996, 2007, 2008) provide fertile philosophical frameworks for the practice of outdoor education that explicitly prompts learning about sustainable relationships between students and their local communities and environments. We now turn to explore some of the ways that these curricula directions play out currently in practice in early childhood education and primary school settings.

Outdoor education in early childhood education settings

Snapshot three

When we decided on using the creation story of Ranginui and Papatuanuku as the basis of our mahi-and in particular the idea that if you look after Papatuanuku, she will look after you- we were surprised at how readily the tamariki took this concept on board, and to heart. We heard them in the playground telling each other that Papatuanuku would not be happy about a piece of rubbish they could see on her. Parent and grandparents came to kindergarten with tales of being scolded at home by their four year olds for alleged crimes against Papa! In fact, it was a surprise when the children began talking about Rangi and Papa as if they were someone's Mum and Dad. We couldn't believe the genuine care, concern and understanding that the children displayed-and these people are our future! The children articulated the ancient story of Rangi and Papa very well, and were able to use the story in their own lives in a practical way, such as working towards a litterless lunchbox, keeping the kindergarten playground and a local park litter free, sorting their rubbish into reusable, recyclable and compostable categories. (Ellwood, 2010, p.20)

Our research for part one of this chapter necessitated moving beyond outdoor education practice in primary schools in Aotearoa New Zealand, which we both have some first-hand familiarity with, into the domain of early childhood education. As we work and teach outside of early childhood education settings, we were curious to identify the ways in which early childhood educators interpreted the curriculum vision of *Te Whāriki* in regards to outdoor education. We were also keen to see how contemporary attention to place responsive approaches and sustainability in professional commentaries and a growing number of outdoor education programmes in the compulsory school sector, played out in early childhood settings. Conversations with early childhood colleagues and further delving into academic journals, professional publications, and sector newsletters revealed much that we thought was of relevance to answering this question.

Learning through play has been recognised to be an essential feature or the “fundamental vehicle for learning” (Elliott, 2010, p.63) in

early childhood education and care settings here and internationally for decades. Outdoor play in particular contributes to the holistic development of children by affording them significant and memorable opportunities to develop physical skills, explore the material and natural world, develop a sense of agency and place (Elliott, 2010), and demonstrate a variety of skills and competencies (Garrick, 2009; Greenfield, 2007). Furthermore, sustained play experiences in outdoor settings in particular are recognised as integral to fulfilling many learning outcomes in *Te Whāriki*. After reviewing New Zealand research on outdoor play in early childhood education, Greenfield's (2007) conclusion is pertinent to note:

Young children want to play outside. However it is not just about letting children go outside but providing outdoor settings that awaken their senses to the beauty, complexity and ever-changing dynamics of the natural world; that honour children as curious and motivated to explore and problem solve, be physically challenged, to practice and repeat experiences, and then move onto new challenges. (pp. 28-29)

Elliott's (2010) plea for the provision of opportunities for children to play in nature spaces extends this argument, and is particularly relevant to our discussion of early childhood outdoor education that promotes curiosity about, enthusiasm for, and connectedness to the natural world. Like others (e.g. Schepers & van Liempd, 2010), Elliott suggests that children's innate connectedness to nature has been eroded by a number of factors including reduced time and access, increasing technology and safety concerns, and changing perceptions of what is an appropriate playspace. Early childhood education provides an ideal setting to redress these factors. Specifically, play in and with nature potentially promotes creativity, cultural inclusion, and engages "the risk appetites of children (as) natural shapes, textures and scales are not so predictable, require concentration and challenge both senses and physical skills" (Elliott, 2010, p.64). New discoveries about the ever-changing world of nature also may occur. Furthermore in nature as Elliott suggests, children can take on "real work" projects such as farming, gardening, and building, developing even more agency about how they can contribute to caring for nature spaces. The value of productive gardens, natural materials for indoor and outdoor play, the use of community members with knowledge, natural playspaces rather than manufactured equipment, and trips

outside the centre into the local community and beyond in early childhood education for sustainability are advocated for.

Examples of these features in practice abound. At the Open Spaces Centre near Whangarei, a commitment to nature-based play means that each day staff and children head to the ‘Wild Wood’ for four hours with their lunchboxes and water bottles in hand. In this outdoor setting of a field and groves of native trees, the children engage in imaginative play, thus learning about nature and non-human nature from firsthand play in amongst it (Brownlee & Daly, 2009). In other early childhood centres, human-made play structures provide a similar stimulus and also reflect a commitment to sustainability in their design. Katikati kindergarten’s adobe playground, built collaboratively with the local community, includes a hobbit house with a “green” roof that allows for a garden, a



maimai for bird watching, an adobe crawl tunnel, and swing bridges (Katikati Kindergarten, 2010). Other teaching approaches supporting sustainability include maintaining gardens, composting, worm

farms, “community basket” for sharing excess fresh produce (Ritchie, Duhn, Rau, & Craw 2010a, p.3), the use of children’s literature to target aspects of sustainable living like recycling (Barker, 2010), art experiences about and using nature to explore sustainable human –non human nature relationships, regular parental and community input, plus children’s active contribution to environmental projects in the wider community. All explicitly seek to promote connectedness and care between the children and the communities they inhabit.

The importance of developing an ethic of care and caring thus appears a central feature of a number of initiatives in early childhood education for sustainability (Ritchie, Duhn, Rau, & Craw, 2010a; Ritchie, 2010b) and accordingly, a feature we consider potentially integral to outdoor education as well. Robinson & Vaealiki (2010) propose caring to be one of four ethical principles (listening, participating, and hopefulness are the other three) that are essential to any sustainability education in early childhood. Caring in this instance however moves beyond traditional notions of children needing to be cared for and not being able to provide care, to a perspective recognising children can care in significant ways (Robinson and Vaealiki, 2010). Accordingly, an ethic of care emphasises interdependence, relationships with family and the natural world, and cultural values such as *manaakitanga* and *kaitiakitanga*. Using a philosophical framework centred on Māori values such as *manaakitanga*, *aroha*, and *kaitiakitanga* interwoven with an ethic of care (Martin, 2007), Ritchie, Duhn, Rau and Craw (2010a) similarly identified the “significance of early childhood educators generating localised “pedagogies of place” for ecological sustainability, integrating kaupapa Māori notions of *kaitiakitanga* and *manaakitanga* along with an ethic of care within their specific communities” (p.3). A host of examples of practice in the ten early childhood centres involved in their research further illustrated this point (see for example, Barker, 2010; Ellwood, 2010, Ritchie, 2010b).

Outdoor education in primary school settings

Snapshot four

At the back of Hurupaki School is a wetland area. “This used to be a swampy horse paddock,” says Callum, “but now we’ve got all kinds of native plants growing here.” Tall trees like *kahikatea* and cabbage tress grow in the Hurupaki wetland,

as well as smaller plants like flax and matipou. In a sheltered corner, the kids are growing a medicinal garden. A medicinal garden has plants that have healing properties. “We did heaps of research,” says Lewis. “We looked in books and on the Internet. We found out that there are hundreds of native plants and trees with healing properties.”... Then they planned their garden... They planted during autumn so that the plants would get plenty of rain to help them grow... Each week, the kids check their plants and pull out any weeds... Next year, they hope their trees will be big enough to harvest the leaves for making ointment. (Gibbison, 2010, p.19)

Our brief examination of early childhood outdoor education highlighted the centrality of play in outdoor spaces, the importance of explicitly teaching children about sustainability and living sustainably, the relevance of a philosophy of care and caring (*manaakitanga*), and the support for teaching approaches integrating subject matter and actively including whanau and the wider community. We now turn to consider some of the distinctive hallmarks of outdoor education in primary schools as it is, or could be, practiced.

As previously noted, the NZC (MoE, 2007) offers a clear mandate to provide opportunities for students to become “connected to the land and environment” and “to be active seekers, users and creators of knowledge and informed decision makers” (p.8). Sobel (2005) describes such a connectedness to the land and local environment as a place-based approach, which is “the process of using the local community and environments as a starting point to teach concepts” (p.7) in a range of subject areas. Using hands-on learning approaches and “real-world” learning experiences, Sobel suggests such an approach facilitates student connectedness to their local communities, valuing of the natural world, as well as an increased commitment to being a contributing member of the community. Furthermore, it is proposed “Community vitality and environmental quality are improved through the active engagement of local citizens, community organizations and environmental resources in the life of the school” (Sobel, 2005, p.7). Martin (2005) similarly highlights the importance of direct experiences to develop a relationship with nature and revisiting areas to get to know and discover them more fully. Hammonds (2008) also reinforces the point that developing “a real appreciation of the natural world needs to be part of children’s lives from the earliest age and integral to all school learning” (p.7).

Thorndon school in Wellington provides a rich illustration of a future-focused outdoor education programme which exemplifies the prompt to use “the river as the text book and the town becomes the classroom” (Sobel, 2005, p.2). Reflecting the school motto of ‘Developing independent creative thinkers and learners’, learning experiences at Thorndon School are based on integrated, authentic contexts in local environments. The potential of the immediate surroundings is embraced and students provided with regular opportunities to engage in environments within walking distance of the school. Thus downtown Wellington, the Botanical Gardens, Tinakori Hill, and the public library all become the ‘classroom’ for outdoor education, with teachers tapping into students’ interests and topical units. Thorndon school students are regularly seen exploring the waterfront and the history of the shore line, visiting the City Galley or Te Papa museum, or involved in projects about sustainability in and around the school. Teachers pride themselves for the integrated approach taken to units of work: science extends to sailing on the harbour with students learning to sail and to understand and ‘read’ the weather; the local farmers’ market becomes a focus of study with producers coming to school to show students how to make cheese, cook fish, and prepare vegetables and the students then journeying to the farms in the Wairarapa to study the source of the products. School playgrounds are also student-centred and emphasise the importance of play in the natural environment. Students can explore and create by digging holes, building huts, developing their own gardens, and the grounds are ever changing. In short, as the school principal Bill Sutton noted (personal communication, June 1, 2011), “playgrounds [in this school] don’t tell kids what to do” and “the more experiences students have, the more connections they can make”.

Extending to more traditional camp experiences does not mean however that the school’s commitment to integrated learning approaches, ‘real’ life relevance, and connectedness to local communities is compromised or forgotten. Thorndon School camps are sequenced through the school, beginning with an overnight noho marae in the school grounds, followed by camps within local environments, and finally a camp planned and implemented by students. Such an approach is ideal for integrated studies and investigations where planning, implementing, and reviewing sit naturally in the teaching and learning process. Planning menus and

a programme that allows time for skill development and building an understanding of the history and cultural significance of the place, necessitates the provision of opportunities for students to discuss and negotiate food choices, alternative transport options, impacts on the environment, environmental clean ups, and the opportunity to enjoy and appreciate the surroundings. Cosgriff (2008) emphasises the value of this integrated approach when she suggests we should look more holistically at outdoor education and take advantage of the “unique histories, geographies, cultural understanding and traditions associated with any given rock, river, lake, or area of bush... (and see them as) integral to the teaching approaches employed or students’ learning” (p.21).

Martin (2005), Hammonds (2008), and Sobel (2005) amongst others, highlight the importance of learning occurring in natural, backdoor environments to engage and connect learners with their immediate world and encourage appreciation and care for the environment. School grounds, creeks, stands of bush, walkways, and parks just outside our classroom doors provide accessible, cost effective, and low risk environments in which students may build a greater depth of relationship, understanding, and engagement by observing and monitoring seasonal changes, the effects of weather, growth patterns, and the many small creatures that live close at hand. Like others (e.g. Owens, 2009), Thevenard (2010) has noted that such “authentic experiences where students research and experience ‘the real deal’ connects them to the environment and the issues of the planet” (p.6).

It appears therefore in a growing number of primary schools, sustainability education and students’ active engagement in ‘making a difference’ in their school and local communities is squarely on the outdoor education agenda. A number take a whole school approach to their projects and draw on community support and resources. For example, Birchville School in Upper Hutt, with the support of the Greater Wellington Regional Council (2004) *Taking Action for Water* programme, has each class developing their own project after an analysis of their immediate environment. Ideas such as replanting the creek at the back of the school, planting the Birchville dam, recycling, and developing worm farms, a walkway through the school bush, and weta homes have been generated (M. Howard, personal communication, 3 October, 2011). These projects encourage integration across subjects, student negotiation, and active

participation in and learning about local environs. Furthermore, traditional notions of adventure are arguably challenged by such an approach. As Beames and Ross (2010) propose, journeys in local neighbourhoods may not only “actually have a much higher degree of authentic adventure than highly regulated ropes course and rock climbing sessions” but also “move away from contrived outdoor challenges towards more authentic, real world, ‘broad adventure’ demanding student initiative and responsibility” (p.101).

In summary, this section has identified that integrated multidisciplinary approaches, the use of the local built and natural environment and community personnel, and teaching approaches that promote student input, decision-making, and action, appear to be conducive to outdoor education promoting sustainable human and non-human nature relationships. This is arguably even more so, when the work of Enviroschools is examined.

The Enviroschools programme in early childhood and primary settings

Snapshot five

Hukanui School is an Enviroschool, where everyone works together to create a healthy and sustainable environment-and the students are in charge! Over the past 10 years, students have worked on many different projects. Their school is an example of how kids can work together to shape a rich, living environment. (Tu’akoi, 2010, p.3)

Snapshot six

Students and teachers from five Porirua Schools recently experienced the diversity of Kenepuru Stream on “Te Oranga o te awa o Porirua”- a guided walk to introduce students to stream life. The trip drew inspiration from Patricia Grace’s story “Watercress tuna and the Children of Champion Street”, set on the banks of the Kenepuru Stream. Greater Wellington Environmental Educator, Warren Field, brought his pet tuna (long fin eel) along, and as the students walked along Kenepuru Stream from Cannon’s Creek School to the Porirua Harbour mouth they learned about the eel’s life cycle and habitat. Local experts shared their knowledge, including fresh water ecologist Frances Forsyth, author and eel enthusiast

from Rangitaane o Wairarapa Joe Potangaroa, Tiff Stewart from Otari Wilton's Bush and Porirua City Council harbour coordinator Keith Calder (retrieved from EnviroSchools, 2010, www.enviroschools.org.nz)

The project in snapshot six was organised by Charles Barrie the Porirua EnviroSchools Facilitator, and was a collaborative effort between EnviroSchools, Porirua City Council and representatives from other organisations, including Greater Wellington Regional Council.

From humble beginnings in Hamilton, there are presently around 776 early childhood education centres, kura, and schools involved with EnviroSchools⁵ all working towards enhancing the wellbeing of the school, community and ecosystem. In regions close to the origins of EnviroSchools like Waikato and Bay of Plenty, this translates to an uptake of over 40% of schools in the region. Five Guiding Principles: Ngā Mātāpono underpin EnviroSchools programmes and ideally are integrated throughout the approaches of participating schools. These principles: empowered students, learning for sustainability, Māori perspectives, diversity of people and cultures, and sustainable communities, clearly resonate with precepts that we have already targeted in our discussions about early childhood and primary outdoor education programmes. Furthermore, the whole school approach that is promoted identifies four underlying areas of school life that effect sustainability and student learning: physical surroundings, organisational management, operational practices, and living curriculum (www.enviroschools.org.nz, 2011). With the support of resource people, students and schools are encouraged to take small steps as they work towards the long-term goal of sustainability being a piece of every aspect of school life and something all students are involved with.

⁵ A full description and discussion of EnviroSchools is beyond the scope of this chapter, however interested readers can read more about the programme on www.enviroschools.org.nz. Data in this section was retrieved from this website on 31 May 2011.

Weaving it all together: Future-focused outdoor education

Manaaki whenua. Manaaki tangata. Haere whakamua.
Care for the land. Care for the people. Go forward.

In part one of this chapter we have endeavoured to discuss and illustrate some of the hallmarks of a forward-focused outdoor education that promotes sustainability and connects students with the communities and outdoor environments they inhabit. Our intention is not to propose these as recipes for practice but to prompt readers to reflect on, and possibly re-vision, their own pedagogical practices.

The tone of this book, as guided by the editors and embraced by the other authors, suggests that environmental sustainability, Māori philosophies, and place responsive and slow pedagogies may have a transformative potential for outdoor education. These sentiments resonate with us also and accordingly, this chapter provides illustrations of outdoor education in early childhood centres and primary schools that in some way bring such ideas alive. Each example prioritises human connectedness and responsiveness to outdoor environments and local communities, draws on a range of curriculum and Māori perspectives, values kinesthetic experiences, and utilises community resources and skills. Using the backyard, bush, beach and rivers as the “text book”, students are provided with engaging opportunities to be active, reflective participants in their own learning and to contribute to the wellbeing of the world around them.

References

- Barker, G. (2010). Building sustainable communities. *Early Education*, 47, 15-18.
- Beames, S. & Ross, H. (2010). Journeys outside the classroom. *Journal of Adventure Education & Outdoor Learning*, 10(2), 95-109.
- Brownlee, P., & Daly, C. (2009). Open spaces. *The Space*, 17, 7-8.
- Cosgriff, M. (2008). What's the story? Outdoor education in New Zealand in the 21st century. *Journal of Physical Education New Zealand*, 41(3), 14-25.
- Cosgriff, M. (2011). Learning from leisure: Developing nature

- connectedness in outdoor education. *Asia Pacific Journal of Health, Sport and Physical Education*, 2(1), 51-65.
- Elliott, S. (2010). Children in the natural world. In J.M. Davis (Ed.). *Young children and the environment* (pp. 43-75). Melbourne, Australia: Cambridge University Press.
- Ellwood, A. (2010). Caring for Papatuanuku, *Early Education*, 47, 19-22.
- Enviroschools. (2010, July). *Te Kaakano: Wellington Region's Environmental Education Update*, 2, Retrieved 1 June 2011 from www.enviroschools.org.nz.
- Garrick, R. (2009). *Playing outdoors in the early years*. (2nd ed.). London: Continuum International Publishing Group.
- Gibbison, S. (2010). Plants that heal. In Cahill, M. (Ed.). *Working with nature*. (pp. 2- 9). Wellington, New Zealand: Learning Media.
- Greater Wellington Regional Council. (2004). *Taking Action for Water programme*. Wellington, New Zealand: Author.
- Greenfield, C. (2007). Why go outside? Review of New Zealand research on outdoor play in early childhood education. *Early Education*, 41, 24-29.
- Haddock, C. (2007). *Education Outside the Classroom (EOTC) survey. Primary School Report*, Wellington, New Zealand: Ministry of Education.
- Hammonds, B. (2008). Environmental Education, *Education Today*, 3.
- Hammonds, B. (2009). Thinking outside the square, *Education Today*, 1, 3.
- Hislop, D. (2008). Editorial, Environmental Education, *Education Today*, 2, 1.
- Katikati Kindergarten. (2010). Building an adobe playground. *ecARTnz*, 3, 12-13.
- Lynch, P. (2006). *Camping in the curriculum*. Lincoln University Canterbury, New Zealand: PML Publication.
- MacArthur, J., Purdue, K., & Ballard, K. (2003). Competent and confident children? *Te Whāriki* and the inclusion of children with disabilities in early childhood education. In Nuttall, J. (Ed.). *Weaving Te Whāriki* (pp. 131-160). Wellington, New Zealand: New Zealand Council for Educational Research.
- Martin, P. (2005). Human to nature relationships through outdoor education. In T.J. Dickson, T. Gray, & B. Hayllar (pp. 28-52). *Outdoor and experiential learning: Views from the Top*. Dunedin, New Zealand: Otago University Press.

- Martin, P. (2007). Caring for the environment: Challenges from notions of caring. *Australian Journal of Environmental Education*, 23, 57-64.
- Ministry of Education. (1996). *Te Whāriki He Whāriki Mātauranga mō ngā Mokopuna o Aotearoa Early Childhood Curriculum*. Wellington, New Zealand: Learning Media.
- Ministry of Education. (1999). *Health and physical education in the New Zealand curriculum*. Wellington, New Zealand: Learning Media.
- Ministry of Education. (2007). *The New Zealand Curriculum*. Wellington, New Zealand: Learning Media.
- Ministry of Education (2008). *Te Marautanga o Aotearoa* (English translation). Retrieved from <http://www.tki.org.nz>
- Ministry of Education. (2009). *EOTC Guidelines Bringing the curriculum alive*. Wellington, New Zealand: Learning Media.
- Mutch, C. (2003). One context, two outcomes: A comparison of *Te Whāriki* and the *New Zealand Curriculum Framework*. In Nuttall, J. (Ed.). *Weaving Te Whāriki* (pp. 111-129). Wellington, New Zealand: New Zealand Council for Educational Research.
- Nuttall, J. (2003). Exploring the role of the teacher within *Te Whāriki*: Some possibilities and constraints. In Nuttall, J. (Ed.). *Weaving Te Whāriki* (pp. 161-186). Wellington, New Zealand: New Zealand Council for Educational Research.
- Owens, N. (2009, Jan-Feb). Beyond the Four Walls. *Live and Learn. Teacher*, 15 – 17.
- Reedy, T. (2003). Toku Rangatiratanga Na Te Mana-Mātauranga “Knowledge and Power Set Me Free...”. In Nuttall, J. (Ed.). *Weaving Te Whāriki* (pp. 51-77). Wellington, New Zealand: New Zealand Council for Educational Research.
- Ritchie, J., Duhn, I., Rau, C., & Craw, J. (2010a). *Titiro Whakamuri, Hoki Whakamua. We are the future, the present and the past: Caring for self, others and the environment in early years’ teaching and learning: A summary*. Wellington, New Zealand: Teaching and Learning Research Initiative. Retrieved 11 May 2011 from www.trli.org.nz/sites/default/files/a-project-pdfs/9260-Ritchie/-Ritchie-et-al-summary.pdf
- Ritchie, J. (2010b). Fostering communities: Ecological sustainability within early childhood education, *Early Education*, 47, 10-14.
- Robinson, L. & Vaealiki, S. (2010). Ethics and pedagogy at the heart of early childhood education for sustainability. In J.M. Davis

- (Ed.). *Young children and the environment* (pp. 154-181). Melbourne, Australia: Cambridge University Press.
- Schepers, W. & van Liempd, I. (2010). Connecting with Nature, *Children in Europe*, 19, 4-5.
- Sobel, D. (2005) *Place-based education: Connecting classroom and community*. (2nd ed.). United States of America: Orion Society.
- Tapp, M. (2008). Sustainability, Good things take time. *Education Today*, 3, 8-9.
- Te One, S. (2003). The context for *Te Whāriki*: Contemporary issues of influence. In Nuttall, J. (Ed.). *Weaving Te Whāriki* (pp. 17-49). Wellington, New Zealand: New Zealand Council for Educational Research.
- Thevenard (2010). A word from the Chair, The Challenges Ahead. *Out and About*, 23, 6-8.
- Tu'akoi, F. (2010). Hukanui Enviroschool: Ten Years. In Cahill, M. (Ed.). *Working with nature*. (pp. 2- 9). Wellington, New Zealand: Learning Media.
- Zink, R. & Boyes, M. (2005-6). What's going on in New Zealand schools: Some findings from the EOTC survey. *Out and About* 15, 15 – 18.
- Zink, R. & Boyes, M. (2007). The nature and scope of outdoor education in New Zealand schools, *New Zealand Journal of Outdoor Education*, 2(2), 57-80.

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School curriculum and outdoor education

Part 2: Secondary School

By Margie Campbell-Price

Cosgriff and Thevenard set the scene in part one of this chapter, by examining contemporary curricula applicable to the early childhood and school sectors. Specifically, they introduced the curricula vision and principles relevant to the contribution outdoor education can make to a sustainable and more equitable future. Moreover, the vision and principles gave a mandate for teachers to provide opportunities for students to connect to the land and environment and become active seekers, users and creators of knowledge and informed decision makers. They then illustrated these principles with innovative examples from the early childhood and primary sectors.

In part two of this chapter the focus shifts to the secondary school context. The discussion focuses on any curriculum-based learning in, for and about the outdoors. To begin, I introduce the secondary school context and some of the curriculum design characteristics that are in stark contrast to the more holistic and interdisciplinary approaches evident in many primary schools. Snapshot examples are again presented to illustrate a range of contemporary outdoor learning approaches and initiatives that explicitly address the vision, principles and values of the New Zealand Curriculum (2007). As in part one, I hope that the snapshots encourage you to consider the possibilities or insights that may open up for your outdoor education practice.

The New Zealand Curriculum for English-medium teaching and learning in years 1-13 (Ministry of Education, 2007) is, as stated in its title, a seamless document that applies to teaching, learning and achievement from (school) years 1 – 13. Despite this, typically school-based curriculum design in the secondary school contrasts to that practiced in primary schools. Anecdotally, it appears that the conceptual “front end” of the NZC (Vision, Principles, Values and Key Competencies) has received significant attention in professional learning, discussion and development in secondary schools since its release in 2007. However, the curriculum has continued to be

delivered most commonly through discrete subjects derived from the eight learning areas and offered in a way that provide pathways into senior courses that enable students to gain either the National Certificate of Educational Achievement (NCEA) or alternative qualifications. This in turn provides pathways into higher (tertiary) education, skills-based qualifications or employment. According to Bolstad and Gilbert (2008), secondary schools have been challenged by the pedagogical shifts and requirements of the NCEA (which was first implemented in 2002), and have had to respond to these under the relentless scrutiny of sceptical politicians, media and the wider community. It is hardly surprising that significant adjustments to implement a new curriculum have been approached in a more measured and considered way, in contrast to primary schools.

Secondary school teachers are commonly referred to as ‘teachers of subjects’ and are usually ‘grouped’ into subject departments or faculties comprising clusters of related subjects within the secondary context. For students, subject choice becomes more evident as they move through secondary school, with the broad and balanced curriculum ‘giving way’ after Year 10 to “more advanced and specialised forms of learning designed to prepare – and sort – students for a range of different post-school options” (Bolstad & Gilbert, 2008, p. 12-13). From Years 11 to 13, students choose the subjects they wish to study from an ever-increasing subject menu. However, the timetabled curricular programme represents only part of the broader curriculum in secondary schools – a ‘Google search’ of any secondary school website will reveal vast offerings of co and extra-curricular activities to encourage students to develop and pursue their own interests to complement, enrich and extend their curricular learning.

Where does outdoor education ‘fit’ in the secondary school?

The question of where outdoor education ‘fits’ into the secondary school curriculum and who teaches or has responsibility for it, is not helped by the demarcation of the secondary curriculum into subjects and the identification of teachers as subject specialists. Within national curricula, outdoor education was officially positioned as one of seven key areas of learning in the *Health and Physical Education in the New Zealand Curriculum* (Ministry of Education, 1999). With

the release of the *New Zealand Curriculum* in 2007 (Ministry of Education, 2007), each of the eight learning areas (of which Health and Physical Education is one) was significantly abbreviated in order to simply convey its 'essence'. Outdoor education has received no further elaboration about its nature and purpose in the *NZC* (2007), with the key area of learning description in the *Health and Physical Education in the New Zealand Curriculum (HPE)* being the most likely reference point for teachers (Cosgriff, 2008). In this description, outdoor education was required to provide students "with opportunities to develop personal and social skills, to become active, safe, and skilled in the outdoors, and to protect and care for the environment" (Ministry of Education, 1999, p.46).

During the years since outdoor education was mandated within HPE, Cosgriff (2008, p.17) suggests that advocates of outdoor education have had a "previously unavailable philosophical 'space'". Rather than focusing on promoting its subject status and legitimacy, attention has instead turned to "equally pressing questions about the what, why, and how of our practice in schools". A scarcity of national data has contributed to the challenges in describing how outdoor education is defined and practiced in schools. Zink and Boyes (2006) note that this is somewhat surprising, given the long history of outdoor education in New Zealand. Furthermore, they also note that "the diversity and complexity of its history is reflected in the lack of semantic agreement", in defining what outdoor education is and how it should be practiced (p.12).

A range of commentators (Cosgriff, 2008; Hill, 2010; Zink, 2003) have noted that the personal and social development goals associated with outdoor pursuits and adventure activities have historically been the core of school programmes. Cosgriff (2008) suggests that in many cases, opportunities to learn about and for the environment have been of peripheral importance. Similarly, Lugg (2004) acknowledges that outdoor adventure activities or outdoor pursuits clearly allow people to access, and perhaps to appreciate outdoor environments. However, she asserts that the use of the outdoors as a 'playground', with expectations that understanding nature will happen incidentally actually contributes to a shallow environmentalism. The discourse that calls for a re-focusing of outdoor education practice to more fully and explicitly educate for and about the outdoors, as well as in the outdoors, is central to this book, and addressed throughout.

However, as Brookes (2002) acknowledges, the personal identification and passion outdoor education teachers bring to particular roles and activities is one of its strengths. This strength, he says, can also be a weakness if it creates a “blinkered view, rather than openness to critique, debate and possibly, change” (p.422). Interestingly, a strong identification with “their” subject and desire to inculcate the knowledge and ways of doing things are, according to Bolstad and Gilbert (2008) characteristic of most subject teachers, particularly in the senior secondary school.

This raises the question of who is best suited to teach outdoor education and lead outdoor learning. As Martin and McCullagh (2011) note, traditionally most outdoor education teachers have been trained as physical education teachers. Although there are common concepts and pedagogy in both subjects, the emerging environmental emphasis has broadened outdoor education into a more independent discipline. Through this frame, teachers not only need the skills and knowledge to travel and live outdoors; they also need to be ecologically literate, with knowledge about human-nature relationships and cultural relationships with nature over time (Martin and McCullagh, 2011). Nonetheless, it is important to recognise the expertise of teachers from ‘other’ subject areas (such as in the social sciences, arts and science) and the contribution they can make to teachers’ professional learning; as well as to student learning in, for and about the outdoors.

The rest of this chapter is thus devoted to snapshot examples that illustrate the way real world contexts and outdoor learning experiences make a contribution to meeting the vision, principles, values and key competencies of the NZC (2007). These snapshots reinforce the notion that authentic ‘real world’ contexts are rarely ‘single subject specific’. Instead, they open the possibilities for deep learning within and across the learning areas (Ministry of Education, 2009).

Outdoor education in secondary schools: Community and school partnerships

Snapshot one: Community and school partnerships in action - University of Otago Science Wānanga

Over three days at noho marae in Colac Bay, Māori students from rural secondary schools link the interrelatedness between human health and environmental health by exploring the theme of water through the fields of science, environmental science, physical education and physiotherapy. These were interwoven with mātauranga Māori (traditional knowledge), and scientific and cultural resource management tools formed in partnership between iwi and scientists. Under the guidance of Māori and Pākehā scientists and health professionals, the students used scientific methods and a Cultural Health Index survey to study water quality in the local estuary. Māori post-



Oraka – Aparima Feb 2011. Image taken by University of Otago.

graduate students, a lecturer and an experienced waka-ama (outrigger canoe) leader guided the students through the tikanga (practice and protocol) of building a waka, paddling on the river and learning traditional games and sports. Six tertiary students from the School of Physical Education Māori Association provided valuable tuakana/teina (older sibling) role models for the school students and teaching experience for the tertiary students. The kaupapa (philosophy) of waka-ama is strongly based on working together, facing challenges with collaboration and respect, optimising personal physical health and being aware of environmental cues.

Bringing together all they had experienced, the Chair of Oraka-Aparima Rūnaka later presented students with examples, in which they engaged with science and mātauranga when making resource management decisions. In particular, they focused on a 12-year project (Kia Mau Te Titi Mou Ake Tonu Atu) in collaboration with the University of Otago researching the sustainability of the traditional harvest of titi (aka muttonbird) chicks by local Māori and drawing on the oral and written histories of birders and birding from many generations. Students were encouraged to see the past, see connections and actions, and look to the future for where their responsibilities and roles may lie.

On the final day, all participants gave koha (donation) back to the community by taking action and planting in the local O Koura native wetland restoration project adjacent to the marae on the final day. This provided an opportunity for students to reflect on the history of the place, what had happened and why, and the complexity of restoring ecosystems while contributing to improved environmental health and their own health for a sustainable future.

The University of Otago Science Wānanga originated from a stated objective by the late Dr Paratene Ngata, a prominent figure in Māori health, to increase participation of rangitahi (young people) in his Ngati Porou iwi in the sciences and health science. Ngati Porou had already made huge gains in ICT among their young people, and Dr Ngata wanted to see a similar change in science uptake. “We want scientists in our schools” he said. The wider objective of the wānanga

programme is to raise the engagement and achievement of Māori in senior science in low to mid decile, rural/provincial New Zealand schools. A concern was disengagement from science at school by Māori students, due in part to literacy “too many hard words and writing”, relevance and context “it’s nothing to do with me”, and stereotypes “scientists are old men in white coats”.



Lauren Light from Te Wharekura o Arowhenua at Murihiku Marae June 2010. Image by University of Otago Staff.

At Science Wānanga, Māori students participate and contribute in two-three day experiential science activities or projects, based on marae and in their local communities. Science is facilitated by tertiary students and scientists and presented alongside mātauranga Māori provided by kaumātua (respected elders), which encourages students to understand connections and actions through science that are relevant to their lives. Māori and non-Māori scientists also participate and together create an inter-cultural space that breaks down assumptions by living, working and sleeping together on marae. The wānanga follows tikanga that show respect for Māori values and the students give their attention and focus to a scientific worldview.

An understanding of multiple worldviews is particularly beneficial for young Māori, who will be the future contributors to Iwi Management Plans. Māori perspectives, represented in Iwi Management Plans play an important role in achieving the purpose of the New Zealand Resource Management Act (RMA 1991), which intends to promote the sustainable management of natural and physical resources. Iwi Management Plans provide knowledge on matters of significance to tangata whenua (indigenous people of the land), allow Māori to influence these processes in a proactive way and generate greater community understanding of the views of iwi on the environment. A mutual understanding of multiple worldviews, alongside scientific evidence smoothes processes between iwi and local councils and improves resource management for all.

The relationships between schools, marae and the universities are a strength of Science Wānanga. To date, there have been over 60 university staff and postgraduate students, and more than a dozen community members involved in delivering science projects plus numerous kaumatua, kuia, whanau and ringawera providing manaakitanga on marae. Future focused topics are chosen by communities in consultation with iwi, school teachers and students from previous wānanga in the same regions to ensure the themes are kept relevant. As an example, the community of Ngāti Porou asked for the following themes to be included in the June 2011 Science Wānanga: oil chemistry (due to oil company exploration off the nearby coast), the geology of earthquakes and tsunami (following the 2010/2011 Christchurch earthquakes), and space physics (because of the upcoming Transit of Venus in June 2012).

A collaborative plan between stakeholders within the university is being developed to ensure the ongoing viability of this programme, with a focus on meeting the needs of existing iwi partners and researching the experiences of participants at Science Wānanga. Currently the University of Otago has Science Wānanga partnerships Rūnanga and schools in Southland, Otago, Marlborough, and the North Island's East Coast, Hawkes Bay, and Northland (Hunt, D. 2011a, 2011b).

This Science Wānanga provides a rich illustration of community and school partnerships, together utilising culturally responsive pedagogies to fulfill the NZC (2007, p.8) vision of creating an

“Aotearoa New Zealand in which Māori and Pākehā recognise each other as full Treaty partners, and in which all cultures are valued for the contributions they bring”. Furthermore, these experiences connect students with their wider lives, and engage the support of their whanau and communities, to bring real life meaning to their curriculum learning. The partnership with university-based scientists and post-graduate students open up pathways for further learning and encourages them to think about their future contribution as members within their communities.

LEOTC and outdoor education in secondary schools

Snapshot two: Mad about fish

“I remember taking the group down to the shore, and we found these little white eggs. I had no idea what they were so we collected a sample and took them back to the teaching lab and put them under the microscope, where they hatched in front of our eyes” recalls Sally Carson, educator at the New Zealand Marine Studies Centre in Portobello, Otago. “They looked like little octopus, so we brought in a scientist who got some reference material, and we identified them together. They were cuttlefish, and the kids were so excited to be part of this process of discovery that was happening before their eyes... What we are doing is creating situations that you can’t recreate in the classroom” (Tringham, 2006, p.4)

Since 1994, the Ministry of Education has purchased services, known as Learning Experiences Outside the Classroom (LEOTC) from a range of organisations, including museums, zoos, art galleries and science centres to provide contextualised learning experiences. The snapshot above illustrates the hands-on experiences, supported by access to tools, objects, exhibits, artefacts and expertise that support learning and are accessible through the numerous LEOTC-contracted providers throughout New Zealand.

The New Zealand Marine Studies Centre, like all LEOTC providers offers a range of ‘learning packages’ to schools. However, teachers are urged to work closely with the LEOTC education officers to determine the learning goals, and to link the hands-on experience with pre and post visit experiences. Research conducted by Moreland

and others (Rivers, 2006) found that contextual learning is more effective when students interact with different tools, objects and exhibits. The Marine Studies Centre is popular with students studying Year 13 biology, as an opportunity to develop their scientific skills and work towards an achievement standard for the NCEA, related to carrying out an investigation into the ecological niche of an animal. Through a 3-day programme, students study a particular animal and its habitat in relation to others, pose questions and hypotheses, design an experiment, carry it out and verify the results. The authenticity of context is considered to be not just motivational for the students, but also enables them to effectively meet the requirements of the standard, due to their ability to control variables because of on-site marine tanks and environmental monitoring equipment (Tringham, 2006).

This section has identified that communities throughout New Zealand have diverse resources to enable students to participate in their curriculum learning as active seekers, users and creators of knowledge. These real world contexts and hands on approaches, according to Sobel (2005), facilitate students' understanding and valuing of the natural world.

Outdoor education in secondary schools: The power of authentic outdoor contexts

Snapshot three: An enterprising future

With a focus on the future, Year 10 students from Waimea College engaged community expertise from the local district council and an Enviroschools coordinator to develop a 50 year vision for the Waimea Inlet in Nelson. The students researched information, visited local areas, investigated issues and created action projects. They selected an area of interest across a range of subject areas to focus their project on and engaged in testing water quality, mapping out land uses, interviewed stakeholders, examined bio-diversity, and constructed strategies for the future. These included designing and creating models of bridges for the proposed cycleway, making models of the future inlet, producing information brochures and videos for the public, and designing and printing t-shirts with a related environmental theme. The project culminated with

the production of vision board, along with recommendations and other project creations. These were presented to an expert panel of local councilors and conservation leaders. Following this, they were displayed at a local shopping mall. (Ministry of Education, 2011).

The snapshot from Waimea College illustrates the powerfulness of interdisciplinary learning, especially when conducted in students' own backyard. Adopting a problem solving approach, students develop skills to investigate and respond to local environmental issues, work collaboratively, independently and imaginatively.

Snapshot four: Tracking the journey of the longfinned eel

In large inner tubes, the students cruising down the river, the same path the longfinned eel takes on its incredible journey to the ocean. Along the way they took water samples and compared them as they made their way along. Using a hinaki (eel catching basket), they caught a few longfinned eels. "Now I know what they look like and where they live", said one student. They had a noho marae at Papawai for two nights where they took part in powhiri (welcome) and learned the protocols of being on a marae. A Māori elder entertained students with his stories of the river, its history and importance to his people. Since returning to school, the students are working with a local artist on a tapestry project to raise the profile of the longfinned eel and its survival, and writing stories about their experience for future generations (Ministry of Education, 28 March, 2011).

As snapshot four demonstrates, Wairarapa's Kuranui College effectively utilises inquiry-based skills to direct students' learning in their integrated studies. The learning journey experienced by Year 9 students, gives students a close look at one of the important taonga (treasure) of their local community, the Ruamahunga River. The river has been the economic and recreational lifeblood for many generations. Many marae are located close to the river, which Māori traditionally used for transportation and as a source of food. More recently however, the effects of farming has compromised the river's health. As a consequence, fish species and the longfinned eel have been threatened. In this real life setting, students acquire knowledge

of past history, values and traditions; and are encouraged to look to the future and consider the contribution they might make to sustaining the future of their local taonga. Classroom learning is 'brought alive' and given greater meaning for these students when it is effectively interwoven with the outdoor experiential learning components.

Outdoor education in secondary schools: The place of personal and social development

Up until now, I have incorporated snapshot examples of a range of future focused contemporary outdoor learning approaches that draw on a variety of learning areas. There is a risk that the personal and social outcomes traditionally associated with outdoor education and other informal learning, be overlooked and marginalised as we focus on future scenarios; with 'future' relating to societal or environmental scenarios, as well as preparing students to become future adults. The informal contexts afforded by outdoor learning enable students the time and space to enjoy 'being', live in the moment, be playful and have fun. Zink (2004, 2010) noted that teachers should not assume that what they think students will gain and 'take away' from outdoor experiences will be the same as those teachers anticipate. Her own assumption that the scheduled activities were where the 'important stuff' happened was found to be flawed; it was the unstructured time and space between activities, such as sitting around the fire, free time and getting ready for activities that held meaning and value to the students. Although the students acknowledged the organised activities, the things they thought would remain with them the longest were the memories of the games at the beach, the chats in the tent, and the practical jokes they played on each other. As students suggested, "This is when you make friends and they will be your friends for life" (Zink, 2010, p.34). Larsen and Jenssen (2004) similarly noted that the social motive for going on a school trip was more important to students than the sophistication of the trip, attraction of the destination, or educational goals. They acknowledged that the teenage years are a time of experimentation and negotiating identities and therefore, the informal context of a school trip offered students valuable opportunities to develop their social connection with peers, and to test their own identities and construct and reconstruct social bonds.

The development of skills and confidence to journey through and live in outdoor environments continues to be heralded as the justification for the inclusion of adventure activities and outdoor pursuits in outdoor education programmes. The introduction of the NCEA and its myriad of possible standards have enabled teachers to develop dedicated outdoor education courses and weave outdoor learning into existing courses for students who seek to pursue this area of study (Campbell-Price, 2010). As a consequence, a greater regularity of outdoor learning within the senior school timetable has required teachers to consider the environments they are selecting for their students, with a much greater emphasis on the local environment. These regular experiences, sustained throughout the year, give students opportunities to become confident, active and skilled participants. Thus, the status of these 'legitimate' outdoor education courses enable teachers to reflect on the what, why and how of their practice. Through a combination of explicit teaching and utilising the teachable moment, students may consider the outdoors to be a playground; however, they also reflect on their own footprint, explore differing environmental value positions, and become informed decision-makers.

Outdoor education in secondary schools: Students' pursuing their own interests

Snapshot five: Enviroschools – a student perspective

"I began at Otago Girls' High School in 2005: then a Bronze award Enviroschool, with many environmental projects already underway. My involvement as a student was initially because I wanted to meet like-minded people who were as passionate about conservation and sustainability as I was. As a member of the Envirogroup I participated in beach cleanups, school-wide paper recycling and tree planting. Environment representatives from each class took part in workshops on the Action Learning Cycle and forming a school vision map. I found a niche within the school, but the Enviroschools programme helped me to realise that I was in no way alone: it felt empowering to know that there were cool young people doing similar projects at their schools and within their local communities.

I enjoyed Enviroschools because it helped me to apply my knowledge practically. Projects I took part in were challenging, creative, action-based, and had visible results. They included energy audits and energy saving schemes for the school; raising awareness about waste, recycling and composting; and scientific studies such as the Seaweed Study and CloudSat. A turning point for me was when I attended the Enviroschools Youth Jam 2008 in Rotorua, an event focussed on youth teaching youth and the theme of 'Designing Sustainability'. I returned to school inspired. I progressed to taking on leadership positions within a very exciting time where our school gained our Silver Award. With the help of the Enviroschools facilitators and students from other Enviroschool high schools in Dunedin, I co-organised DJ09, which aimed to connect each of our school's enviorgroups, plan projects and share our successes. I helped to run events at school such as the 350 Day of Action (which incorporated climate-change awareness raising), and contributed to re-working the school vision statement to include key statements including 'caring for our environment' and 'kaitiakitanga'.

Being a student, it was sometimes difficult to see what meaningful and lasting actions I could contribute to make the everyday running of the school more sustainably focussed. I have a lot of respect for the key teachers and Enviroschools facilitators who supported and mentored students like myself, helped to integrate environmental education into the curriculum, kept tabs on the action groups, and managed to juggle everything else while still staying sane!

Enviroschools has definitely influenced the paths I have taken in my studies. I am currently studying Geography and Māori at Otago University. I have continued to help out at Enviroschools workshops after leaving school. The skills I learnt, the people I met, and the opportunities I have had have shaped the way I interact with the world. My identity will always include the concepts of sustainability, community, learning, taking action and having fun". (Rosina Scott-Fyfe, 2011)

The voice of students conveying the meaning and value of their education outdoors experiences is under-represented in the literature. Rosina's snapshot is a powerful example of how student-led initiatives can provide meaningful and sustained opportunities to develop each of the key competencies to live, work and contribute as active members of their communities. In this example, Enviroschools (introduced by Cosgriff and Thevenard in part one of this chapter) has contributed to Rosina finding 'her place' in her school and the shaping of her identity. Her engagement in, and leadership of school and inter-school initiatives have enabled her to develop these competencies over time, in increasingly wide-ranging and complex contexts. The NZC (2007) outlines values to be encouraged, modeled and explored. This snapshot demonstrates ways in which the students, through Enviroschools, have been able to aim high and persevere; think and act critically, creatively and reflectively; participate in their community to care for the community now and in the future; and to act with integrity. In turn, Rosina and her student colleagues have contributed to those values being expressed in everyday actions and interactions within the school.

Alongside curriculum learning, students in the secondary school have numerous opportunities to pursue their own interests in co-curricular initiatives or activities, of which Enviroschools is one example.

Outdoor education in secondary schools: The place of the outdoor centre

Snapshot six: A change of place, a slower pace and learning for life

"Te Kahu soars overhead seeing life from a different perspective, relaxed, peaceful, planning and reflecting, sharp eyed for opportunity and making excellent choices. Ask any senior St Cuthbert's College student what the hawk means to them and they will say Kahunui. It is the place I spent 28 days with my form class living independently in a house, exploring the environment and leaving a legacy that makes Kahunui all the better for my passing through".
(Furminger, 2011, p.18)

Chris and John Furminger explain the Kahunui experience:

A motive for establishing Kahunui was a desire to create opportunities for students to develop resilience. The principal, in discussions with other educational leaders knew that anecdotally some talented students from a range of schools had been ‘stars’, ‘sailed’ through university, but ‘collapsed’ when not recruited into prestigious firms. This was the first time they had encountered failure in their education. She also recognised the tendency of many parents intervening, rather than letting their daughter’s ‘fail’ at something, or mitigating the results of failure. Developing resilience, the philosophical roots of Kurt Hahn’s Outward Bound movement inspired the principal to approach Outward Bound for places for her students to have an experience that may develop that trait. As they could not take the numbers the school decided to establish their own centre.

In establishing the philosophies of Kahunui, which welcomed its first cohort of students in 2008, the senior leadership team and Director’s formed a compass with four pointers indicating the directions they wished the students to explore. To the North, *New Beginnings*, of place, self, a fresh start with others and learning new skills. At the South, *Adventure*, make connections with wild places, have fun, gain new skills, and take the time to appreciate the outdoors, self-reflect, make friends and find new strengths. The West, points to *Connection*, with self, others, this place and Kaitiakitanga, and the students’ guardianship of Kahunui which focuses on a footprint legacy. The fourth pointer, East, is *Learning for life*, focusing on developing skills, knowledge and attitudes for life; learning experientially, housekeeping and building relationships, being resilient and independent.

Each student in Year 10 spends four weeks with her class at Kahunui, during which time they live independently and sustainably in houses, and engage in experiential learning through an academic and outdoor programme. ‘Space’ in the programme encourages time for play, socialisation, solitude, quietness, reflection and creativity. Students participate in a Rich Task (Beane, 1993) “Footprint project”, where they are

challenged within a sustainability frame with the question *“How can we ensure Kahunui stays the same or better for your daughter when she comes here in 24 years time?”* Students are encouraged to think about their soft footprint, their place in Kaitiakitanga (guardianship), with a long-term view about their role in cultural, social and environmental sustainability. Through critical questioning, students are required to investigate, analyse and evaluate research, and then propose strategies and support it with action. Each cohort of students ‘makes their mark’. One group focused on the vision of improving the Kahunui biodiversity, this resulted in students researching the importance of wetlands. Answering why and how students developed proposals and projects to preserve the wetlands: they gathered seedlings, built a shade house, fenced off areas, created boardwalks, mapped the wetlands, created planting plans and planted, identified and removed pests. These student-led, future focused projects leave a legacy for the next group to build on and contribute to. Such has been the connection to and sense of ownership in these initiatives, a wiki kahupedia has been established and is updated by the students who each add their learning, research and actions. *“For some, Kahunui made them think for the first time, about their place in the world”* (Karen Leuschke, Dean of Year 10, 2008).

(Furminger, C, and Furminger, J. 2011. Personal communication).

The presence and accessibility of outdoor centres has supported outdoor learning in New Zealand for many decades (Lynch, 2006). As a recent initiative, Kahunui enables students to step away from their ‘home’ (Auckland) routines and create their own community for an extended period. Underpinned by a clearly articulated ‘compass’ philosophy, the Kahunui experience brings together academic and outdoor programmes along with independent living to enable students to become confident in their own identities, resourceful, and resilient young people who are connected to each other as members of a community. This sustained experience provides the space and environment for each student to learn about their own values and those of others, build relationships, and through rich task learning, become guardians of this special place for future generations to enjoy and connect with.

Weaving it together

This part of the chapter has focused on outdoor education in the secondary school. Through snapshot examples of innovative contemporary practice, it seems there is much worth celebrating. They demonstrate that educating outdoors towards a sustainable future is not simply outdoor education, as positioned within the Health and Physical Education learning area. Instead, other learning areas are also expected to utilise real world contexts and hands on approaches, to engage students in learning in, for and about the outdoors. These examples illustrate a variety of innovative experiential approaches utilised to provide meaningful, holistic and authentic learning experiences that explicitly educate for a more sustainable future. It is evident that those who instigated these approaches or initiatives have ‘paused for some philosophical space’ to consider the what, where, why and how of their practice in order to adapt to and meet current curricula vision and principles. I share the intent of Cosgriff and Thevenard in part one, who hope that these glimpses of programmes inspire you to consider what the common threads are in the snapshots, and, thus what possibilities or insights might be opened up for your own outdoor education practice?

References

- Beane, J. (1993). Problems and possibilities for an integrative curriculum. In R. Fogarty, (ed.). *Integrating the curricula*. Melbourne: Hawker Brownlow Education.
- Bolstad, R. & Gilbert, J. (2008). *Disciplining and drafting, or 21st century learning? Rethinking the New Zealand senior secondary curriculum for the future*. Wellington, New Zealand: NZCER Press.
- Brookes, A. (2002). Lost in the Australian bush: Outdoor education as curriculum. *Journal of Curriculum Studies* 34, 405-425.
- Brown, M. (2009). Reconceptualising outdoor adventure education: Activity in search of an appropriate theory. *Australian Journal of Outdoor Education*, 13(2), 3-13.
- Campbell-Price, M. (2010). Is what is assessed in senior outdoor education all the students learn? *Out and About* 24, 10-15.
- Cosgriff, M. (2008). What's the story? Outdoor education in New Zealand in the 21st century. *Journal of Physical Education New Zealand*, 41(3), 14-25.

- Furminger, J. (2011). Kahunui, our place. *Out and About*, 25, 18-20.
- Haddock, C. (2007). *Education outside the classroom (EOTC) survey: Secondary school report*. Wellington, New Zealand: Ministry of Education.
- Hill, A. (2010). Reflections on beliefs and practices from New Zealand outdoor educators: Consistencies and conflicts. *Australian Journal of Outdoor Education*, 14(1), 30-40.
- Hunt, D. (2011a). Personal communication (30 August 2011). Kaititui Wananga, University of Otago Division of Sciences.
- Hunt, D. (2011b). Science Wānanga Case Study. In *Linking Culture, Education and Sustainability: Good practices and experiences from around the world*. UNESCO. <http://insight.glos.ac.uk/SUSTAINABILITY/UNESCOCULTURE>
- Larsen, S., & Jenssen, (2004). The school trip: Travelling with, not to or from. *Scandinavian Journal of Hospitality and Tourism*, 4(1), 43-57.
- Lynch, P. (2006). *Camping in the curriculum: A history of outdoor education in New Zealand schools*. Lincoln University: PML Publication.
- Martin, P., & McCullagh. (2011). Physical education and outdoor education: Complementary but discrete disciplines. *Asia-Pacific Journal of Health, Sport and Physical Education*, 2(1), 67-78.
- Ministry of Education. (1999). *Health and Physical Education in the New Zealand Curriculum*. Wellington, New Zealand: Learning Media.
- Ministry of Education. (2007). *The New Zealand Curriculum for English-medium teaching and learning in years 1-3*. Wellington, New Zealand: Learning Media.
- Ministry of Education. (2011). Educating for enterprise: Year 10 students from Waimea College in Nelson complete their school year with a cross-curricular project. *New Zealand Education Gazette*. In print 28 February 2011. <http://www.edugazette.govt.nz/Articles/Article.aspx?ArticleId=8282>
- Ministry of Education. (2011). Learning journey on eel trail. *New Zealand Education Gazette*. In print 28 March 2011. <http://www.edgazette.govt.nz/Articles/Article.aspx?ArticleId=8306>
- Rivers, J. (2006). Effectiveness of programmes for curriculum-based learning experiences outside the classroom: A summary. Ministry of Education: http://www.tki.org.nz/r/eotc/leotc/index_e.php

- Sobel, D. (2005). *Place-based Education: Connecting classroom and community*. (2nd edition). USA: Orion Society.
- Tringham, K. (2006). Curiosity fuel. *Tukutuku Korero: New Zealand Education Gazette*, 20 March, 4-5.
- Zink, R. (2003). Abseiling at 5, rafting at 10, what do we do with them when they are 15? Why pursuits might seem like an obvious choice for outdoor education. *New Zealand of Outdoor Education Ko Tane Mahuta pupuke*, 1(2), 56-62.
- Zink, R. (2004). Does Pamela Anderson have a place in outdoor education? *Childrenz Issues*, 8(1), 13-15.
- Zink, R. (2010). How research can change the way we think about outdoor education? *Out and About*, 24, 33-35.
- Zink, R., & Boyes, M. (2006). The nature and scope of outdoor education in New Zealand schools. *The Australian Journal of Outdoor Education*, 10(1), 11-21.